

ED 404 691

CS 509 441

AUTHOR Schaller, Kristi A.; Callison, Marybeth G.
TITLE Multiple Intelligences and Student Learning:
Reframing Our Teaching Methods in the Basic Public
Speaking Course.
PUB DATE Nov 96
NOTE 17p.; Paper presented at the Annual Meeting of the
Speech Communication Association (82nd, San Diego,
CA, November 23-26, 1996).
PUB TYPE Viewpoints (Opinion/Position Papers, Essays, etc.)
(120) -- Guides - Classroom Use - Teaching Guides
(For Teacher) (052) -- Speeches/Conference Papers
(150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Classroom Techniques; Higher Education; *Intelligence
Differences; Introductory Courses; Learning
Activities; *Learning Processes; *Public Speaking;
*Student Characteristics; Student Needs; Teaching
Methods; *Theory Practice Relationship
IDENTIFIERS Gardner (Howard); *Multiple Intelligences;
Theoretical Orientation

ABSTRACT

This paper discusses the theory of multiple intelligences (H. Gardner, 1983) as it applies to the basic public speaking course. According to the paper, the multiple intelligences theory (MI) suggests that intelligence should not be viewed as a single dimension, but rather as a composite of several aptitudes and talents. The paper states that Gardner theorizes that individuals have different intelligences and, therefore, different aptitudes for learning. The basic public speaking course is an ideal forum to incorporate MI theory and that instructors should use a variety of teaching methods to stimulate students' multiple intelligences. It notes that the seven intelligences individuals may possess are: bodily-kinesthetic; verbal-linguistic; logical-mathematical; musical-rhythmic; visual-spatial; interpersonal-social; and intrapersonal-introspective and describes each type. MI theory can be used in three positive ways by instructors in public speaking: teaching skills valued by the community; developing interdisciplinary curricula; and personalizing instruction to reflect differences among students. Classroom assignments, speech topics, and sample exercises appropriate for each type of intelligence are suggested in the paper. Contains 16 references. (Author/CR)

* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *

Multiple Intelligences and Student Learning:
Reframing our Teaching Methods in the Basic Public Speaking Course

Kristi A. Schaller and Marybeth G. Callison

Georgia State University
One University Plaza
Atlanta, GA 30303-3083
(404) 651-3200
joukas@panther.gsu.edu (Schaller)
gs02mgc@panther.gsu.edu (Callison)

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

- ☒ This document has been reproduced as received from the person or organization originating it.
- ☐ Minor changes have been made to improve reproduction quality.

- Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

PERMISSION TO REPRODUCE AND
DISSEMINATE THIS MATERIAL
HAS BEEN GRANTED BY

K. Schaller

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)

Paper presented at the annual meeting of the Speech Communication Association, San Diego, CA, November 1996.

Abstract

This paper examines the theory of Multiple Intelligences (Gardner, 1983; 1993) as it applies to the basic public speaking course. Multiple Intelligences (MI) theory suggests that we should not view intelligence as a single dimension, but as a composite of several aptitudes and talents. Gardner (1993) theorizes that individuals have differing intelligences and, therefore, have different aptitudes for learning. We argue that the basic public speaking course is an ideal forum to incorporate MI theory and that instructors should use a variety of teaching methods to stimulate students' multiple intelligences. In this paper we describe MI theory and suggest assignments and activities that public speaking instructors might consider.

Multiple Intelligences and Student Learning:

Reframing our Teaching Methods in the Basic Public Speaking Course

Students learn differently. Intelligence is multidimensional and includes many abilities not always addressed in classroom assignments and activities (Gardner, 1983; 1993; Gardner, Kornhaber, & Wake, 1996; Goleman, 1995; Nelson, 1995; Pinto, Geiger, & Boyle, 1994; Reiff, 1992). Educators typically emphasize left-brain strengths such as verbal and analytical skills and logic and ignore right-brain strengths such as creativity and intuition (Eisner, 1994; O'Brien, 1989). Howard Gardner's Multiple Intelligences (MI) theory (1983; 1993) favors education that recognizes differences among individuals (Armstrong, 1994) and discourages standardized, linear presentations of material. This results in "a more equitable approach to education" (Eisner, 1994, p. 559).

Student ability and motivation to learn are highly individualized (Nelson, 1995; Pinto, Geiger, & Boyle, 1994). Potter and Emanuel (1990) found that student satisfaction is related to teacher communication style. In addition, student learning styles demonstrate preferences for teaching style and can affect academic achievement. Students are motivated when they are involved in the learning process and when instruction allows them to be reflective about their learning (Armstrong, 1994; Reiff, 1992). The framework of MI theory encourages teachers to adapt their communication style to involve and to motivate students.

The basic public speaking course is an excellent forum for implementing MI theory. Students from numerous fields of study take the course, and enrollments are increasing (Gibson, Hanna, & Leichty, 1990; Handford, 1993). With such a large, diverse student population,

instructors should use a variety of teaching methods because the traditional format of lecture or lecture/discussion will not reach all students. This paper gives an overview of Gardner's MI theory and defines the seven intelligences; applies MI theory to the basic public speaking course; and provides assignments and specific strategies for each of the intelligences.

Multiple Intelligences Theory

Gardner (1983) defines intelligence as “a biopsychological potential that is drawn on within a culture for a variety of purposes” (p. 577). Specifically, Gardner (1993) states:

An intelligence entails the ability to solve problems or fashion products that are of consequence in a particular cultural setting or community....The problems to be solved range from creating an end for a story to anticipating a mating move in chess to repairing a quilt. Products range from scientific theories to musical compositions to successful political campaigns (p. 15).

An intelligence is an ability, a talent, or a mental skill that encompasses what Gardner (1993) terms “human cognitive competence” (p. 15). Eisner (1994) defends Gardner’s position and explains that psychometric measures of intelligence are limiting because they do not reflect how “people differ in their ability to solve problems in different areas of life and to make contributions to cultures in different ways” (p. 557).

Gardner (1983; 1993) proposed that individuals may possess seven intelligences. These intelligences are: 1) bodily-kinesthetic; 2) verbal-linguistic; 3) logical-mathematical; 4) musical-rhythmic; 5) visual-spatial; 6) interpersonal-social; and 7) intrapersonal-introspective.

The *bodily-kinesthetic* intelligence deals with the body and the physical self; the body is used to express emotions, to build products, and to play games and sports. Dancers, actors,

athletes, surgeons, mechanics, and craftspeople have highly developed bodily-kinesthetic intelligence.

The *verbal-linguistic* intelligence deals with reading, writing, and linguistic skills. Individuals who have developed this intelligence enjoy puns, reading, word games, and are skilled at verbal and/or written expression. Verbal-linguistic intelligence is manifested by orators, poets, playwrights, editors, politicians, journalists, lawyers, and storytellers.

The *logical-mathematical* intelligence includes logical, mathematical, and scientific abilities such as reasoning, conceptualizing hypotheses or cause-effect relationships, and the recognition of abstract relationships or patterns. Scientists, accountants, mathematicians, and computer programmers have highly developed logical-mathematical intelligence.

Individuals who possess high degrees of *musical-rhythmic* intelligence appreciate or respond to rhythms and melodies or may also write and/or perform music. Examples of individuals with a high level of this intelligence include composers, performers, and music critics.

The *visual-spatial* intelligence involves the ability to create mental pictures or visual representations or models. These individuals are sensitive to visual details and learn best through mentally visualizing or actually seeing things. Visual-spatial individuals include engineers, surgeons, artists, sculptors, photographers, interior designers, architects, and pilots.

The *interpersonal-social* intelligence deals with the ability to understand and relate to others; to work effectively with and to be responsive to other people. This intelligence also involves an awareness of others' moods, motivations, intentions, and nonverbal communication. Teachers, salespeople, politicians, negotiators, and religious leaders possess high degrees of interpersonal-social intelligence.

Finally, the *intrapersonal-introspective* intelligence involves a keen awareness of one's inner self; feelings, emotional states, self-esteem, and goals. Those who have a highly developed intrapersonal-introspective intelligence tend to be contemplative and to have accurate self perception. Counselors and theologians would possess a high degree of intrapersonal-introspective intelligence (Armstrong, 1993; 1994; Gardner, 1993).

People possess all seven intelligences, but do not develop them equally (Armstrong, 1993). Also, the intelligences are interactive and do not act in isolation (e.g., individuals typically use more than one intelligence to perform a task, solve a problem, play a board game, participate in a sport, or learn to speak in public). Educators can teach all students to develop their multiple intelligences, and "can (and should) teach *anything* using all of the intelligences" (Lazear, 1992, p. 24).

Multiple Intelligences Theory in the Basic Public Speaking Course

While MI theory is currently used in K-12 schools throughout the country, it has not been applied to university classrooms (Armstrong, 1994). This paper demonstrates that MI theory is applicable to college students and specifically to college students in the basic public speaking course.

Gardner (1995) indicates three positive ways to use MI theory in education: first, to teach the skills and abilities valued by the community and by the broader society; second, to develop curricula using a pluralistic or interdisciplinary approach that deviates from the traditional lecture format; and third, to personalize instruction to reflect differences among students. The basic public speaking course easily meets these three criteria. Skills acquired in the basic public speaking course will be used in college and beyond. These skills are valued by the community and

by society. Students who improve their ability to communicate increase their chances of success as adults both personally and professionally. In addition, public speaking classes can be structured in a variety of ways; and finally, public speaking encourages students to express their individuality.

According to Gardner (1993), students can either experience *crystallizing experiences* (the "aha!" positive feeling of a success) or *paralyzing experiences* (the sense of failure). These experiences typically happen at a young age, but can occur at any age in a person's life (Armstrong, 1993; Armstrong, 1994; Gardner, 1993). The basic public speaking course is particularly relevant for this concept. Most students are apprehensive about public speaking and performing poorly can lower their self-esteem. The traditional curriculum of the basic public speaking course could exacerbate this problem because it accentuates the verbal-linguistic, interpersonal and logical-mathematical areas. Educators must modify the existing format to accommodate the spectrum of multiple intelligences so that potentially paralyzing experiences can become crystallizing experiences.

As students review a syllabus in a public speaking course, they typically will see a lecture (theory) and speaking (practical application) format. Student activities may include speeches, research and homework. The speeches may be impromptu, extemporaneous, memorized, or manuscript; activities may be graded or ungraded. While classes may vary according to the instructor's personal preferences, the expectations for students are the same: *competence in the written portion of public speaking* (appropriate test-taking skills; presentation of research; and the ability to create an outline), *competence in the delivery of a speech* (appropriate vocal and nonverbal delivery; effective topic selection and audience analysis) and *competence in the theories of communication and public speaking* (ability to understand how these interrelate and how to

use them to produce effective speeches). These skills are primarily verbal-linguistic and logical-mathematical, with some attention to visual-spatial skills (use of visual aids) and interpersonal skills (audience analysis). Little emphasis is placed on the intrapersonal, musical, or bodily-kinesthetic areas.

For the students who excel in the verbal-linguistic, logical-mathematical, visual or interpersonal intelligences, public speaking becomes a valuable learning experience. For the remaining students, public speaking does not pique their interests nor enhance their potential skills.

Theory appeals to verbal-linguistic and logical-mathematical thinkers who understand the concepts and see the overview of communication. Interpersonal thinkers can appreciate the interconnections of communication and public speaking. They should be encouraged to view public speaking as a teaching format or as a connection with other people, since they interact comfortably with others. Visual-spatial thinkers can see the purpose and results of communication through visual reinforcement such as videotapes of exemplary public speeches and through public speaking experiences in the classroom. Bodily-kinesthetic learners can appreciate the importance of the nonverbal facets of public speaking; they should be encouraged to use gestures and to walk while speaking. Movement stimulates the brain of bodily-kinesthetic types and facilitates thinking and talking. People with musical intelligences should be encouraged to focus on pitch and inflection and other uses of the voice to convey messages; they should be taught that public speaking is not only in the words. Students with intrapersonal intelligences should be encouraged to think of public speaking as a "goal" that will have personal benefits.

Multiple Intelligences: Classroom Assignments, Speech Topics and Sample Exercises

Instructors can enhance the public speaking experience by developing or redesigning assignments to address all of the intelligences. According to Armstrong (1994), "Multiple Intelligences theory can help educators learn their own style, plus introduce broad activities to develop neglected intelligences, activate underdeveloped or paralyzed intelligences, and bring developed intelligences to higher levels of proficiency" (p. 23).

Instructors should also encourage students to select speech topics appropriate to their personal intelligences. For example, verbal-linguistic types might want to give speeches about storytelling classes or conventions or about word games and board games such as Trivial Pursuit. Spatial intelligence types may like three-dimensional or visual games; still or video photography; drawing, sculpting or painting; and should be encouraged to use visual support of their topics. Musical types may want to talk about the dynamics of music and be encouraged to incorporate music into their speeches. Bodily-kinesthetic intelligence types may talk about body movement and its importance, and demonstrate bodily movement as their visual aids (e.g., showing the steps to country line dancing or demonstrating tai chi or yoga). Speeches about acting, mime, sports, and other "hands-on" activities would also be appropriate for those with bodily-kinesthetic intelligences. Logical-mathematical types may speak about computer languages, problem solving, science-related venues or activities or products. Interpersonal intelligence types may discuss networking, volunteerism, collaboration, etiquette, the importance of other cultures, and the lives of socially competent individuals (philanthropists, counselors, politicians, social workers, etc.). Intrapersonal types may speak about meditation or introspective exercises, counseling, dreams, entrepreneurship, hobbies, self-esteem, assertiveness, or self-confidence.

The best solution is for educators to provide a variety of topics or exercises for each assignment, and then allow students to choose. Students can participate in and be reflective about their learning; be personally involved in the curriculum; and will be motivated because their instruction is more individualized. Students can strengthen their particular intelligences while getting the greatest benefit from the public speaking experience. Some examples of exercises, defined by individual intelligences, are listed below. These assignments are adapted from Armstrong (1993). Exercises were extracted because of applicability and modified for use in a public speaking class.

Linguistic Intelligence

1. Have students revise and rewrite a speech
2. Have students rewrite the text of a book or newspaper/magazine article into manuscript form
3. Encourage storytelling exercises (chain stories; true or fictional stories, etc.)
4. Have students develop a hypothetical speaking club or association and explain the rules (this exercise also accesses the logical-mathematical intelligence)
5. Have students play Charades for speech-related topics

Spatial Intelligence

1. Have students describe a design to the class (or to one classmate) and have the listener(s) try to replicate the design
2. Have students en masse observe a non-typical location (without explaining the purpose of the observation); then have students return to the classroom and describe it

3. Have students observe a videotape of a crime, or an enactment of a crime, and then describe the victim and the criminal
4. Have students visit an art display (local museum, university, etc.) and then describe one of the pieces of art that they liked
5. Encourage students to use visual aids (flat and dimensional) with their speeches
6. Provide students with random objects; have them create and describe a new use for the objects
7. Have students describe new products or processes that would be useful at school

Musical Intelligence

1. Incorporate music (such as jingles or advertisements) into persuasive speeches using Monroe's Motivated Sequence
2. Have students discuss what music they would add to a speech to give it emphasis without overriding the message
3. Use music as an "aural aid" (instead of using a visual aid)
4. Have students give speeches about the importance of music in our everyday lives
5. Have students debate whether music aids or interferes with studying (musical versus non-musical intelligences)
6. Have students bring favorite lyrics to class and describe their meaning (linguistic and musical intelligences)
7. Have students give speeches about "my most important musical experience"

Bodily-Kinesthetic

1. Have students give speeches about exercise, athletics, sports, or acting

2. Encourage students to gesture and to move around within the parameters of their speaking area (e.g., not to be "statues")
3. Encourage students to discuss their "gut reactions" to other speeches (responding to a speaker's nonverbal delivery as well as to the topic and content of a speech)
4. Make students aware of their body posture by using an exercise describing a hypothetical "confidence suit." For example, tell students they do not have to "dress professionally" to deliver a speech in front of the class; however, have them describe hypothetical clothes (such as imaginary padded shoulders, an invisible back brace to facilitate posture, and no pockets to occupy their fidgeting hands) that would benefit their posture and improve their delivery
5. Have students practice visualization techniques for relaxation

Logical-Mathematical

1. Assign abstract thought exercises dealing with "what if" scenarios
2. Assign exercises dealing with problem-solution formats
3. Assign "guesstimating" exercises to answer hypothetical questions; have students explain how they arrived at the answers (e.g., "A study recently revealed that the fifth grade is a pivotal time to determine whether or not students will become effective public speakers. What do you think happens in the fifth grade that causes this?")

Interpersonal

1. Show pictures of people and have students describe what they are doing or thinking
2. Show pictures of couples and have students describe how they are interacting
3. Have students observe people at school and describe their interactions

4. Have students speak to classmates and try to influence, encourage, or discourage them
5. Have students explain why quality circles are important in the workplace or why interactive classrooms are appropriate

Intrapersonal

1. Have students reveal a self-disclosure to the class
2. Have students discuss how they are "different" from everyone else, and what they have to offer due to that difference
3. Have students discuss their goals for the public speaking class
4. Have students keep a journal about their public speaking experience(s) in-class and away from class
5. Assign exercises about students' dreams and interpretations of their dreams
6. Have students assume the identities of other people and then explain why they would like to meet themselves

Conclusion

The purpose of this paper is to introduce communication educators to MI theory, and to delineate ways to apply it in the basic public speaking course. Gardner's (1983; 1993) MI theory provides an excellent framework for basic public speaking course instructors to address differing student intelligences. Gardner admits that MI theory is not a panacea for educational reform; however, the theory represents a form of curriculum development to meet individual student learning needs. Teachers cannot individualize their instruction, but the MI framework provides a variety of teaching methods that can be adapted to diverse student learning styles. According to Armstrong (1994), "Multiple Intelligences helps teachers expand their current teaching repertoire

to include a broader range of methods, materials, and techniques for reaching an ever wider and more diverse range of learners” (p. 50). We encourage those who teach the basic public speaking course to incorporate the activities suggested here to stimulate student intelligences and to increase student motivation, satisfaction, and learning.

References

- Armstrong, T. (1993). *Seven kinds of smart: Identifying and developing your many intelligences*. New York: Penguin Books.
- Armstrong, T. (1994). *Multiple intelligences in the classroom*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Eisner, E.W. (1994). Commentary: Putting multiple intelligences in context: Some questions and observations. *Teachers College Record*, 95, 555-560.
- Gardner, H. (1983). *Frames of mind: The theory of multiple intelligence*. New York: BasicBooks.
- Gardner, H. (1993). *Multiple intelligences: The theory in practice*. New York: BasicBooks.
- Gardner, H. (1995). Reflections on multiple intelligences: Myths and messages. *Phi Delta Kappan*, 77, 200-209.
- Gardner, H., Kornhaber, M.L., & Wake, W.K. (1996). *Intelligence: Multiple perspectives*. Fort Worth, TX: Holt, Rinehart and Winston.
- Gibson, J.W., Hanna, M.S., & Leichty, G. (1990). The basic speech course at colleges and universities. *Basic communication course annual*, 2, 233-257.
- Goleman, D. (1995). *Emotional intelligence*. New York: Bantam Books.
- Handford, C.J. (1993). Service course or introduction to the discipline. In L.W. Hugenberg, P.L. Gray & D.M. Trank (Eds.), *Teaching and directing the basic communications course* (pp. 27-32). Dubuque, IA: Kendall/Hunt.

Lazear, D.G. (1992). *Teaching for Multiple Intelligences*. Bloomington, IN: Phi Delta Kappa Educational Foundation.

Nelson, K. (July/August 1995). Nurturing kids' seven ways of being smart: How to develop your students' multiple intelligences. *Instructor*, 26-34.

O'Brien, L. (1989). Learning styles: Make the student aware. *NASSP Bulletin*, 73, 85-89.

Pinto, J.K., Geiger, M.A., & Boyle, E.J. (1994). A three-year longitudinal study of changes in student learning styles. *Journal of College Student Development*, 35, 113-119.

Potter, W.J., & Emanuel, R. (1990). Students' preferences for communication styles and their relationship to achievement. *Communication Education*, 39, 234-249.

Reiff, J.C. (1992). *Learning styles*. Washington, D.C.: National Education Association.



U.S. Department of Education
Office of Educational Research and Improvement (OERI)
Educational Resources Information Center (ERIC)



REPRODUCTION RELEASE

(Specific Document)

I. DOCUMENT IDENTIFICATION:

Title: Papers presented at the Annual Meeting of the Speech Communication Association (1996) Multiple Intelligences and Student Learning: Reframing our Teaching Methods in the Basic Public Speaking Course	
Author(s): * Kristi A. Schaller and Marybeth G. Callison	
Corporate Source:	Publication Date: Presented 11/96

II. REPRODUCTION RELEASE: * One author's signature is sufficient.

In order to disseminate as widely as possible timely and significant materials of interest to the educational community, documents announced in the monthly abstract journal of the ERIC system, *Resources in Education* (RIE), are usually made available to users in microfiche, reproduced paper copy, and electronic/optical media, and sold through the ERIC Document Reproduction Service (EDRS) or other ERIC vendors. Credit is given to the source of each document, and, if reproduction release is granted, one of the following notices is affixed to the document.

If permission is granted to reproduce and disseminate the identified document, please CHECK ONE of the following two options and sign at the bottom of the page.

☒
↑
**Check here
For Level 1 Release:**
Permitting reproduction in
microfiche (4" x 6" film) or
other ERIC archival media
(e.g., electronic or optical)
and paper copy.

The sample sticker shown below will be
affixed to all Level 1 documents

PERMISSION TO REPRODUCE AND
DISSEMINATE THIS MATERIAL
HAS BEEN GRANTED BY

Sample

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)

Level 1

The sample sticker shown below will be
affixed to all Level 2 documents

PERMISSION TO REPRODUCE AND
DISSEMINATE THIS
MATERIAL IN OTHER THAN PAPER
COPY HAS BEEN GRANTED BY

Sample

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)

Level 2

☐
↑
**Check here
For Level 2 Release:**
Permitting reproduction in
microfiche (4" x 6" film) or
other ERIC archival media
(e.g., electronic or optical),
but *not* in paper copy.

Documents will be processed as indicated provided reproduction quality permits. If permission to reproduce is granted, but neither box is checked, documents will be processed at Level 1.

"I hereby grant to the Educational Resources Information Center (ERIC) nonexclusive permission to reproduce and disseminate this document as indicated above. Reproduction from the ERIC microfiche or electronic/optical media by persons other than ERIC employees and its system contractors requires permission from the copyright holder. Exception is made for non-profit reproduction by libraries and other service agencies to satisfy information needs of educators in response to discrete inquiries."

**Sign
here→
please**

Signature: <i>Kristi A. Schaller</i>	Printed Name/Position/Title: Kristi A. Schaller, Ph.D. Assistant Professor	
Organization/Address: Georgia State University One University Plaza; Atlanta, GA 30303 Department of Communication	Telephone: 404-651-3503 E-Mail Address: joukas@panther.gsu.edu	FAX: 404-651-1409 Date: 3/19/97

III. DOCUMENT AVAILABILITY INFORMATION (FROM NON-ERIC SOURCE):

If permission to reproduce is not granted to ERIC, or, if you wish ERIC to cite the availability of the document from another source, please provide the following information regarding the availability of the document. (ERIC will not announce a document unless it is publicly available, and a dependable source can be specified. Contributors should also be aware that ERIC selection criteria are significantly more stringent for documents that cannot be made available through EDRS.)

Publisher/Distributor:

Address:

Price:

IV. REFERRAL OF ERIC TO COPYRIGHT/REPRODUCTION RIGHTS HOLDER:

If the right to grant reproduction release is held by someone other than the addressee, please provide the appropriate name and address:

Name:

Address:

V. WHERE TO SEND THIS FORM:

Send this form to the following ERIC Clearinghouse:

Acquisitions
ERIC/REC
2805 E. Tenth Street
Smith Research Center, 150
Indiana University
Bloomington, IN 47408

However, if solicited by the ERIC Facility, or if making an unsolicited contribution to ERIC, return this form (and the document being contributed) to:

~~ERIC Processing and Reference Facility~~

~~1100 West Street, 2d Floor
Laurel, Maryland 20707-3598~~

~~Telephone: 301-497-4080~~

~~Toll Free: 800-799-3742~~

~~FAX: 301-953-0263~~

~~e-mail: ericfac@inet.ed.gov~~

~~WWW: http://ericfac.piccard.csc.com~~